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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,926	02/06/2006	Gidcon Livingston	PO8537US00/DEJ	4926
881 7590 10/29/2008 STITES & HARBISON PLLC 1199 NORTH FAIRFAX STREET SUITE 900 ALEXANDRIA, VA 22314			EXAMINER MISKA, VIT W	
			ART UNIT 2833	PAPER NUMBER
			MAIL DATE 10/20/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/520,926

Applicant(s)

LEVINGSTON, GIDEON

Examiner

Vit W. Miska

Art Unit

2833

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-22 is/are allowed.
- 6) ☒ Claim(s) 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tokoro et al (20020167865) in view of Baur et al (6705601). The reference discloses a balance spring 30 made of carbon (Par. 014, line 1) for a balance wheel 20. The thermal expansion and thermal elastic coefficient specifications are not set forth in the reference. However, it is known from Baur et al that the frequency of the balance spring oscillator in timepieces is dependent on temperature variations which affect the thermoelastic coefficient of the spring as well as the thermal expansion of the spring and balance (col. 1, lines 18-24). Patentee further suggests at col 1, lines 63-67 that to correct for temperature changes, the thermoelastic coefficient and the coefficient of thermal expansion of the spring is adjusted in relation to the thermal expansion coefficient of the balance to compensate for these changes. Consequently, it would be obvious for one skilled in the art to select these coefficients in the balance spring and

balance of Tokoro et al in such a way as to compensate for thermal variations of the system, as suggested and well known from Baur.

2. Claims 1-22 are allowed.

Response to Arguments

3. Applicant's arguments have been given careful consideration, but have not been found persuasive. Applicant suggests that the teachings of Baur and Tokoro are not compatible because the former is directed to an Nb-Hf alloy, whereas Tokoro employs carbon nanofibers. It is not suggested in the grounds of rejection that a combination of the two references be made, but rather that the known relationship among thermal expansion, thermoelastic coefficients, temperature of the balance spring and the balance and the variations in the frequency of oscillation as set forth in Baur be applied to the balance-spring system of Tokoro to compensate for thermal variations. Claim 23 does not specify the materials for the balance spring or the balance, other than the spring be non-magnetic. Neither is a specific relationship claimed among the coefficients of thermal expansion and thermoelastic coefficient. Therefore, the two references when considered in totality, would suggest to one of ordinary skill in the art that in order to compensate the balance oscillating mechanism in a timepiece for thermal variations, the coefficients of thermal expansion of the spring and balance and the thermoelastic coefficient of the spring may be appropriately chosen. The claim fails

to specify which components (i.e. the spring or balance) may have these coefficients adjusted, but merely indicates that these coefficients are "arranged to cooperate with the coefficient of thermal expansion of the balance" to provide the compensation. Therefore, the argument that carbon nanofibers cannot be tuned for these properties is ineffective, as the claim does not require such tuning. Any desired compensation could be provided, for example, by selecting the balance materials accordingly to cooperate with the spring properties. In addition, the carbonized resin suggested in Tokoro for the balance spring may be constructed in a variety of ways (e.g. by varying the amount and type of resin) , thus comprising coefficients which may be tuned, as well known.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vit W. Miska whose telephone number is 571-272-2108. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on 571-272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vit W. Miska/
Primary Examiner, Art Unit 2833